Release 5

Operator's Manual

for the

DECsystem-20

at the

University of Chicago

August, 1983

Conventions Used In This Manual

^char indicates a control character

__ in examples, text that is underlined is what you should type

$ at the EXEC level, indicates ENABLEd operator capabilities

<ESC> stands for the ESCape key

(CR) stands for the RETURN key

NOTE

For all examples, carriage return is assumed after each line unless otherwise noted.

TABLE OF CONTENTS

1. INTRODUCTION 1
1.1 OPERATOR RESPONSIBILITIES 1
1.2 CHIP AND DALE 1
1.3 ADDITIONAL DOCUMENTATION 1
1.4 CONTROL CHARACTERS 2
1.4.1 Other Important Keys 2

2. OPR: THE OPERATOR INTERFACE 3
2.1 ABOUT OPR 3
2.2 RUNNING OPR 4
2.2.1 The OPR Consoles 4
2.2.2 Starting Up The OPR Consoles 5
2.3 OPR COMMAND FEATURES 5
2.3.1 Listing OPR Commands - ? 5
2.3.2 Using Recognition On OPR Commands - <ESC> 6
2.3.3 Reprinting Incorrect Commands - ^H 6

3. USING OPR 7
3.1 GETTING INFORMATION 7
3.1.1 Getting Help 7
3.1.2 Displaying System Characteristics 8
3.1.3 Checking Memory Status 9
3.1.4 Obtaining A List Of Users 10
3.2 COMMUNICATION WITH USERS 11
3.2.1 Sending A Broadcast Message 11
3.2.2 Sending A Message To A Single User 11
3.2.3 Responding To Messages From Users 12
3.2.4 Sending MAIL 13
3.2.4.1 System-Wide Mail 13
3.2.4.2 Mail To A User 14
3.2.5 Aborting A Mail Message 16
3.3 CONTROLLING THE TAPE DRIVES 17
3.3.1 Removing Tape Drives From Service 17
3.3.2 Returning Tape Drives To Service 18
3.3.3 Checking Tape Drive Status 18
3.3.4 Switching Tape Drives Between Chip And Dale 19
3.3.5 Mounting Tapes 20
3.3.5.1 Mounting Labeled Tapes 20
3.3.5.2 Mounting Unlabeled Tapes 21
3.3.6 Canceling A MOUNT Request 22
3.3.7 Initializing Tapes 22
3.4 CONTROLLING THE DISK DRIVES 23
3.4.1 Mounting Disk Packs From A Crashed System 23
3.4.2 Remounting Disk Packs Onto A Restored System 24
3.5 CONTROLLING THE LINE PRINTER 27
3.5.1 Backspacing A File 27
3.5.2 Reprinting A File 27
3.5.3 Skipping To The Next File 29
3.5.4 Restarting The Printer 29
3.6 CONTROLLING THE PLOTTER 30
3.7 CONTROLLING JOBS 31

3.7.1 Checking The Batch Queue 31
3.7.2 Canceling A Job 32
3.7.3 Restarting A Job 32
3.8 LOGGING OUT A USER 33
3.9 CONTROLLING THE DEC/MVS LINK 35

4. THE MAIN CONSOLES - THE OPERATOR'S CTYS 39
4.1 THE MAIN CONSOLE AND PTYCON 39
4.2 OPERATOR TASKS ON THE MAIN CONSOLE 39
4.2.1 Reloading The System 39
4.2.2 Action Codes 42
4.3 STARTING OPERATOR JOBS AFTER A *PWRRES* BUGCHK 43

A. DEC-20 PERFORMANCE CHECK 45

B. DEC-20 OFFLINE COMPUTER ENTRIES 47

C. RESETTING THE FRONT END 48
C.1 FRONT END "LOCK UP" 48
C.2 HOW TO RELOAD THE PDP-11. 48

D. SYSTEM DIAGNOSTICS 50
D.1 THE KLAD SYSTEM 50

E. MOUNTING & DISMOUNTING TAPES 51
E.1 MOUNTING TAPES 51
E.2 DISMOUNTING TAPES 51

F. MOUNTING & DISMOUNTING DISK PACKS 52
F.1 MOUNTING A DISK PACK 52
F.2 DISMOUNTING A DISK PACK 52

G. LOADING & ADJUSTING THE PRINTER 53

H. SHUTTING DOWN THE DEC-20 54

LIST OF EXAMPLES

Example 1 - TOPS-20 Components 4
Example 2 - Setting Up the OPR Console 5
Example 3 - Listing Available Commands 6
Example 4 - Using ^H 6
Example 5 - Getting HELP 7
Example 6 - Displaying System Status 8
Example 7 - Checking Memory 9
Example 8 - SYSTAT 10
Example 9 - SENDing a Broadcast Message 11
Example 10 - SENDing a Message to a User 11
Example 11 - Responding to PLEASE Requests 12
Example 12 - Sending System-Wide Mail 14
Example 13 - Sending Mail to a User 15
Example 14 - Not Sending Mail 16
Example 15 - Making Tape Drives Unavailable 17
Example 16 - Making Tape Drives Available 18
Example 17 - Displaying Tape Drive Status 19
Example 18 - Moving Tape Drives Between the DECs 19
Example 19 - Mounting Labeled Tapes 20
Example 20 - Mounting Unlabeled Tapes 21
Example 21 - Canceling a MOUNT Request 22
Example 22 - Mounting Disk Packs from a Crashed System 23
Example 23 - Remounting a Disk Pack 24
Example 24 - Backspacing the Printer 27
Example 25 - Reprinting a File 28
Example 26 - Skipping to the Next File 29

LIST OF EXAMPLES

Example 27 - Restarting the Printer 29

Example 28 - Fixing Hung PLOTTER 30

Example 29 - Checking the Batch Queues 31

Example 30 - Canceling a Batch Job 32

Example 31 - Restarting a Job 33

Example 32 - Logging Out a User 34

Example 33 - Checking the DEC/MVS Link 35

Example 34 - Restarting the Link on Chip 38

Example 35 - Restarting the Link on Dale 38

Example 36 - Starting OPERATOR Jobs after a PWRRES BUGCHK 44

Example 37 - Hourly Performance Check 45

Example 38 - Shutting Down the System 54

CHAPTER 1

INTRODUCTION

1.1 OPERATOR RESPONSIBILITIES

As an operator of the two DECsystem-20s at the University of Chicago, your responsibilities include:

1. Maintaining the DEC-20 Offline Log.
2. Checking the status of the DEC-20s on a frequent, regular basis.
3. Responding to user MOUNT, DISMOUNT, and PLEASE requests.
4. Reloading (IPL) the systems when necessary.
5. Cooperating with Digital field engineers and Computation Center systems programmers during preventive maintenance and systems test time.
6. Checking the status of the operating environment whenever the system has been out of your control for preventive maintenance or systems test time. This includes making sure that the operator jobs are enabled, that the consoles are running under their assigned jobs, and that all tape and disk drives are online.
7. Answering user queries.

1.2 CHIP AND DALE

The two DECs operated by the Center are called Chip and Dale.

1.3 ADDITIONAL DOCUMENTATION

This manual reflects specific tasks and procedures for operating the DECsystem-20 at the University of Chicago. Other manuals you might need for reference include:

1. TOPS-20 Operator's Guide - this is the complete manual, covering all aspects of operating a DECsystem-20
2. Getting Started With TOPS-20 - this manual contains enough information to get you started with the basic TOPS-20 commands.
3. TOPS-20 User's Guide - information in this manual could be useful to you, especially when you are PUSHed out of OPR, or CONNECTed to the subjob running in the EXEC on the Operators' CTY.

4. TOPS-20 Utilities Guide - this manual contains the documentation for DUMPER and other TOPS-20 utilities.

1.4 CONTROL CHARACTERS

Any of the following control characters can be generated by pressing the CTRL (control) key, while, at the same time, depressing the key for the control character you want.

^C gets the attention of the TOPS-20 Operating System, DON'T USE ^C ON OPR CONSOLE.

Two ^Cs exits the current command or program and returns to TOPS-20 command level (@). Do not use ^C on the OPR console.

^R reprints the current line. Some programs do not repeat their prompts after ^R. This is of no consequence.

^T initiates a program status report. The system prints the status of the current program and the actual computer processing time used thus far for the current job.

^U deletes the current line.

1.4.1 Other Important Keys

RUBOUT or DELETE deletes the previous character in a line currently being typed.

ESCAPE completes a uniquely identified command field and prints "Guide Words."

CHAPTER 2

OPR: THE OPERATOR INTERFACE

2.1 ABOUT OPR

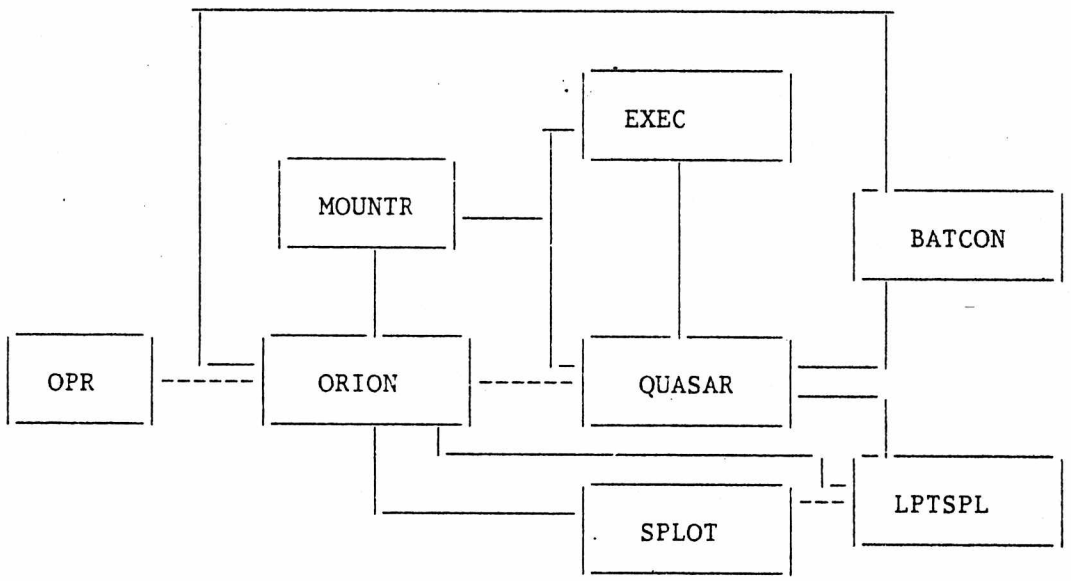
OPR, the operator command language, provides you with one command language to communicate with the various components of the TOPS-20 operating system. These components include:

1. QUASAR - the system queue manager and the heart of the batch system
2. BATCON - the Batch controller
3. LPTSPL - the line-printer spooler
4. MOUNTR - the tape drive and disk drive controller
5. ORION - the message router
6. SPLOT - the plotter spooler
7. SHRSERV - the spooler that transfers files between Chip and Dale
8. IBMSPL - the link with the MVS system

'Spooling' means that the data is sent to a holding area before being routed to its final destination. A "spooler" is a program that performs this function. The various components communicate or 'talk' to ORION or QUASAR through a mechanism called Inter-Process Communication Facility, or IPCF. Example 1 below shows the relationship between these components.

Using OPR, you can issue commands to BATCON, LPTSPL, and MOUNTR, as well as send messages to users, respond to messages from users, and get information about the system or about specific devices.

----Example 1----



OPR uses the TOPS-20 command parser, which means that you can use the ESCape key for prompting. The syntax of OPR commands is:

OPR> command keyword argument unit/stream # /switches

All commands take keywords, but arguments, unit or stream numbers, and /switches are optional depending upon the specific command. Each portion of an OPR command line (that is, keyword, argument, etc.) is called a field.

2.2 RUNNING OPR

OPR is automatically started when the DEC-20 is IPLed. To run OPR your OPERATOR privileges must be ENABLEd. This too will happen automatically when the system comes up.

2.2.1 The OPR Consoles

OPR is run on the two Concepts video consoles near the tape drives, one for each DEC. The consoles are identified by labels. All messages from users, requests for tape mounting, and messages to you from any of the TOPS-20 components (for example, printer messages from LPTSPL or messages from a batch stream from BATCON) will be printed on these terminals.

Although it is possible to PUSH out of OPR to do a SYSTAT or send mail, any operator tasks that require an extended time in the EXEC (at TOPS-20 command level with the @ prompt), should be done from the main consoles, the Operator's CTYs, which are located next to the disk drives. This is especially true if you need to run a program like DUMPER, since it will block messages being sent to

OPR from the DUMPER program (for instance, MOUNT requests and the like).

2.2.2 Starting Up The OPR Consoles

The OPR console connected to either Chip or Dale is likely to be up when the system is up. The WINDOW program is run on each console; it splits the screen into halves. System status is displayed on the upper half, and OPR commands are entered on the bottom half. For your purposes, you only need to concern yourself with the lower window. If, on the rare occasions, you need to start up the console, follow the procedures listed below.

1. Logging in as usual.
2. Enter the ENABLE command at TOPS-20 level.
3. Inform the system of the terminal characteristics.
4. Enter the WINDOW command.
5. ~~TAKE the file WINDOW.ATO which will automatically split the screen and start OPR.~~

----Example 2----

```
@login operator
@enable
$setup ~~vt100~~ c108
$window
~~WINDOW>take window.ato~~
OPR>                          <== in the lower window
```

2.3 OPR COMMAND FEATURES

OPR has three command features that allow you to list available commands, keywords, arguments or switches, use the ESCape key for recognition input, or reprint incorrect commands.

2.3.1 Listing OPR Commands - ?

The question mark feature (?) allows you to list all available OPR commands. It also allows you to list all options you might have for keyword, argument, or switch, by typing ? in any of those fields.

----Example 3----

```
OPR>? one of the following
OPR? one of the following:
 ABORT          ALIGN          BACKSPACE.     CANCEL
 CLOSE          CONTINUE       DEFINE         DISABLE
 DISMOUNT       ENABLE         ENTER          EXIT
 FORWARDSPACE   HELP           HOLD           IDENTIFY
 MODIFY         PUSH           RELEASE        REPORT
 REQUEUE        RESPOND        ROUTE          SEND
 SET            SHOW           SHUTDOWN       START
 STOP           SUPPRESS       SWITCH         TAKE
OPR>
```

2.3.2 Using Recognition On OPR Commands - <ESC>

Using recognition input allows OPR to help you complete a command. The process is called command recognition. To use command recognition, you only need to enter as much of the command as is necessary to uniquely identify it and then press the ESCape key. OPR will respond with the remainder of the command and any accompanying guide words. Continue entering arguments and pressing the ESCape key until the command is complete. If you did not enter enough of the command to uniquely identify it, the system will ring a bell to let you know that more is expected. If what you typed was so unique that the system didn't recognize it (usually associated with typing errors), OPR will print "? Ambiguous" and another OPR> prompt.

2.3.3 Reprinting Incorrect Commands - ^H

The ^H feature prints the command you typed that resulted in an OPR error message. This occurs when your command did not have the correct format, syntax, switch, or value, or if there was a misspelling. When you press ^H after the OPR error message, OPR reprints the command up to the part of the command that was wrong.

----Example 4----

Suppose you want to issue the FORWARDSPACE command, but give an incorrect value for the /PAGES: switch

```
OPR> forwardspace printer 0 /pages:2(        <==you meant 20
? First nonspace character is not a digit
OPR> ^Hforwardspace PRINTER 0 /PAGES:20
OPR>
11:23:45        Printer 0  --Forward Spaced 20 Pages--
OPR>
```

The ^H will not print on your terminal. OPR will reprint the command line and then wait for you to type in the correct value.

CHAPTER 3

USING OPR

3.1 GETTING INFORMATION

While operating the DECsystem-20, you may need to display certain system characteristics, find out about the number of users on the system and who they are, or get help to execute a particular command. OPR has facilities to provide you with this information.

3.1.1 Getting Help

Rather than use the question mark feature described above for listing commands, their keywords, and their arguments or switches, you can ask OPR directly for HELP about any of the OPR commands. The syntax of the command is

OPR> HELP keyword

where keyword is any of the OPR commands.

----EXAMPLE 5----

```
OPR> help release
                --- Help for RELEASE command ---
        The RELEASE command allows you to release a job request
        that was held with the HOLD command.

        The format is:

        RELEASE keyword

        where keyword must be one of the following

                BATCH-jobs
                CARD-punch-JOBS
                PAPER-tape-PUNCH-jobs
                PLOTTER-jobs
                PRINTER-jobs

        followed by one of these arguments:

                <request-id-number>     (for a single job)
                User name               (for all jobs of a user)
                *                       (for all job requests)

OPR>
```

3.1.2 Displaying System Characteristics

To display the current information about any particular device or the system in general, use the SHOW STATUS command with one of the following keywords:

BATCH-STREAM	specifies one or more batch input streams
DISK-DRIVES	specifies all the disk drives currently known to the system
PRINTER	specifies the line printer
TAPE-DRIVE	specifies one or more online tape drives. With this keyword you can include a device name in the form MTAn:, the /ALL switch, the /CHARACTERISTICS switch, or the /FREE switch

The optional switches for the TAPE-DRIVE keyword are:

/ALL	specifies that all online tape-drives be displayed. Additional information included with this switch is the AVR status, the label-type, and the density (BPI). This switch is the default.
/CHARACTERISTICS	specifies that the drive name, the type of drive (9 track), and the densities the drive accepts be included for all drives or just one drive if you specified the tape drive name (MTAn:).
/FREE	lists all tape drives currently unloaded and available for mounting. This switch also displays tape drives that are loaded but are not currently being accessed.

----Example 6----

```
OPR> show status printer
OPR>
13:34:25        -- System Device Status --

Printer Status:
  Unit        Status          Jobname  Req#          User
  ----  --------------------  -------  ----  --------------------
-     0  Active                GUIDE    7301  P1.PICKLE
         Started at 13:31:12, printed 24 of 48 pages

OPR>
```

3.1.3 Checking Memory Status

To check memory status, follow the command sequence in the example. This procedure will give you an indication of how much "user memory" is available at the time. The "user memory" is not the same as "physical memory", but it is close enough to tell if a large chunk of physical memory has gone offline.

----Example 7----

```
OPR>push
$info monitor
..
..  (several lines of extraneous information)
..
3002 Pages of user memory
..
..
$pop
OPR>
```

This number should currently be around 3000 for each.

3.1.4 Obtaining A List Of Users

To get a list of users currently on the system, PUSH out of OPR and give a SYSTAT command. Then POP back into OPR after you are done.

----EXAMPLE 8----

```
OPR> push

 TOPS-20 Command processor 5(712)
@systat
 Wed 27-JUL-83 10:45:57  Up 21:21:03
 17+7 Jobs   Load av   1.17   1.21   1.58

 Job  Line Program  User
   4    52  EXEC     STAFF.ADVISOR
   5    55  EXEC     STAFF.TED
   6    26  1022     S1.SIRS
   8    57  1022     T1.TELECOM2
  16    67  EXEC     Not logged in
  17    36  SCSSDV   SPSS.TONY
  18    23  1022     S1.SIRS
  20    33  1022     S1.SIRS
  21    21  1022     S1.SIRS
  23     1  BASIC    AC1.A009
  24    40  1022     S1.SIRS
  25     6  1022     SPSS.ISSUE
  34    51  EXEC     SYSTEMS.RON
  36    76  EXEC     EC1.B056.
  37    27  1022     S1.SIRS
  49    66  BASIC    LC1.L017
  52    74  SCSS     EC1.B063

   1   205  PTYCON   OPERATOR
   2   221  BATCON   OPERATOR
   3   222  SPLOT    OPERATOR
   4   223  MAILER   OPERATOR
   5   224  WATCH    OPERATOR
   7   225  IBMSPL   OPERATOR
  10   226  SHRSRV   OPERATOR
  11   227  SYSTAT   OPERATOR
  13    53  OPR      OPERATOR
  14    72  OPR      OPERATOR

@pop
OPR>
```

3.2 COMMUNICATION WITH USERS

Frequently you will have to communicate with users while operating the DEC-20. The sections below list several methods for contacting individual users, all users on the system at a given time, or all DEC-20 users.

3.2.1 Sending A Broadcast Message

To send a message to all users on the system, use the SEND command, with the ALL keyword.

----Example 9----

```
OPR> send all system going down in 10 minutes (CR)
OPR>
17:49:53        --SEND Command Completed--
OPR>
```

3.2.2 Sending A Message To A Single User

To send a message to only one job (which can be either a terminal user or a batch job), use the SEND command with the JOB argument. With this command, you must also supply the job number. To get the job number, you will have to PUSH out of OPR and do a SYSTAT.

----Example 10----

```
OPR> push

 TOPS-20 Command processor 5(712)
@systat
 Tue 26-JUL-83 12:18:13  Up 72:22:09
 21+7 Jobs   Load av   2.17   2.21   2.58

 Job  Line Program  User
   4    52  EXEC    STAFF.ADVISOR
   5    55  EXEC    STAFF.TED
   6    26  1022    S1.SIRS
   8    57  1022    T1.TELECOM2
  17    36  SCSSDV  SPSS.TONY
  18    23  1022    S1.SIRS
  20    33  1022    S1.SIRS
  21    21  1022    S1.SIRS
  23     1  BASIC   AC1.A009
  24    40  1022    S1.SIRS
  25     6  1022    SPSS.ISSUE
  28    12  BASIC   AC1.A012        <== the user you want
  29     2  EXEC    SPSS.CUST
  30    75  SCSS    EC1.B053
```

```
 35    73  EDIT    R1.RIPS
 36    41  EXEC    SYSTEMS.TODD
 39    10  BASIC   AC1.A004
 41     4  1022    SPSS.PROS
 44    51  EXEC    STAFF.JUDAH
 46    76  EXEC    EC1.B056
 47    27  1022    S1.SIRS

  1   205  PTYCON  OPERATOR
  2   221  BATCON  OPERATOR
  3   222  SPLOT   OPERATOR
  4   223  MAILER  OPERATOR
  5   224  WATCH   OPERATOR
  7   225  IBMSPL  OPERATOR
 10   226  SHRSRV  OPERATOR
 11   227  OPR     OPERATOR
 13    53  OPR     OPERATOR
 14    72  OPR     OPERATOR
@pop
OPR> send job 28 do not queue print jobs until notified
OPR>
12:19:13        --SEND Command Completed--
OPR>
```

3.2.3 Responding To Messages From Users

If a user sends a message to your console via a PLEASE request, use the RESPOND command to answer the request. You must include the number of the message you are responding to. (It can be found beside the time stamp of the message, e.g. , <5> in the example below.) End your message by typing ^Z.

----Example 11----

```
OPR>
17:23:56  <5>  --Message from Timesharing User--
     JOB 31 R1.RAT at Terminal 62
     IS THERE TEST TIME TONIGHT
OPR> respond 5
Enter text and terminate with ^Z
yes preventive maintenance from 1800 to 2100 ^Z

OPR>
```

3.2.4 Sending MAIL

If you need to communicate with all DEC-20 users or with a user who is not currently logged in, you should PUSH out of OPR and use MM to send mail.

MM is a system for efficient mail management, with commands for sending mail, reading mail, answering specific messages, and many other functions that you will ordinarily not need for communication with users.

If you wish to learn more about MM than the few commands documented here, read Memo 2006, "An MM Primer," the file MANUALS:MMREF, and the reference manual, MM in DOCLIST.)

3.2.4.1 System-Wide Mail - You will most likely only send System-Wide mail to announce preventive maintenance schedules, tape drive failure, or similar occurrences. To send System-Wide mail (which is announced to each user as he logs on):

1. PUSH out of OPR
2. Type MM after the @ prompt
3. Type ENABLE after the MM> prompt
4. type SEND SYSTEM after the MM> prompt
5. type a brief subject description after the prompt, Subject:
6. enter your message after the MESSAGE (END WITH ESCAPE OR ^Z) prompt
7. enter ^Z or hit ESCape after you finish typing your message
8. type SEND after the S> prompt
9. MM will respond "Processing local mail..." and then SYSTEM-OK
10. the message [New Message-of-the-Day available] will appear on your console and you will receive the MM> prompt
11. type QUIT after the MM> prompt
12. type POP after the @ prompt
13. you're back in OPR

----Example 12----

```
OPR> push
TOPS-20 Command processor 5(712)
@mm
MM Version 1F(300)-1
Last read: 22-JUL-83 11:25:55, 10 msgs, 2 pages
MM> enable
MM> send system SCHEDULED
   Subject: ~~Preventive~~ Maintenance Tonight
   MESSAGE (END WITH ESCAPE OR ^Z)
There will be ~~preventive~~ SCHEDULED maintenance tonight from 1800 to 2100 (BE SURE TO SPECIFY, (CHIP OR DALE)
(ESC)
S> send
Processing local mail...
system-OK
[New Message-of-the-Day available]
MM> quit
@ pop
OPR>
```

3.2.4.2 Mail To A User - If you need to send mail to a user, PUSH out of OPR and use MM.

1. Give the OPR command PUSH
2. type MM after the @ prompt
3. type SEND username after the MM> prompt where username is the name of the user you want to send mail to
4. type a brief description of the subject of your message after the prompt, Subject:
5. enter your message after the MESSAGE (END WITH ESCAPE OR ^Z) prompt
6. enter ^Z or hit the ESCape key after completing your message
7. type SEND after the S> prompt
8. MM will type "Processing local mail..." and then "username-OK" and you will receive the MM> prompt
9. type QUIT after the MM> prompt
10. type POP after the @ prompt
11. you will be back in OPR

----Example 13----

```
OPR> push

TOPS-20 Command processor 5(7.12)
@mm
MM Version 1F(300)-1
Last read: 23-JUL-83 17:25:36, 10 msgs, 2 pages
MM> send r1.rat
   Subject: Batch job canceled
   MESSAGE (END WITH ESCAPE OR ^Z)
Your batch job was canceled because it called for a tape
to which you do not have access.
(ESC)
S> send
Processing local mail...
R1.RAT-ok
MM> quit
@pop
OPR>
```

3.2.5 Aborting A Mail Message

If, for some reason, you mess up a message you plan to send (especially a System-Wide mail), DO NOT send the message. MM offers you several alternatives for NOT sending a messy message. The simplest is to type ^N to abort the message and then start over.

----Example 14----

```
OPR> push

TOPS-20 Command processor 5(712)
@mm
MM Version 1F(300)-1
Last read: 23-JUL-83 12:23:34, 10 msgs, 2 pages
MM>enable
MM>send system
   Subject: Preventive Maintenance Tonight
   MESSAGE (END WITH ESCAPE or ^Z)
There will b prevnt maintence 2nite
^N              <== the ^N will not print
Abort? yes
MM>send system
   Subject: Preventive Maintenance Tonight
   MESSAGE (END WITH ESCAPE or ^Z)
There will be preventive maintenance tonight from 1800 to 2100
(ESC)
S>send
Processing local mail...
system-ok
[New Message-of-the-Day available]
MM>quit
@pop
OPR>
```

3.3 CONTROLLING THE TAPE DRIVES

The following procedures deal with operation of the tape drives, including mounting and dismounting tapes through OPR, determining the status of the tape drives, switching drives between Chip and Dale, and beginning and ending tape coverage. (If you do not know how to physically mount and dismount tapes, please read Appendix E.)

NOTE

If you have trouble with the tape drives during operation (for example, if you receive

%PROBLEM ON DEVICE: MTAn:

messages, see Part VI, page 1-5 of the TOPS-20 Operator's Guide.

3.3.1 Removing Tape Drives From Service

Normally, the tape drives are under the control of the MOUNTR program. If you need to release one or both drives from MOUNTR's control, use the SET command with the TAPE-DRIVE keyword and the UNAVAILABLE argument. With this command you must also include the name of the unit you are making unavailable - either MTA0: or MTA1:. You must also give a reason for setting the drive unavailable. OPR will prompt you for the reason by printing

ENTER TEXT AND TERMINATE WITH ^Z

on the console.

----Example 15----

```
OPR> set tape-drive MTA0: unavailable
ENTER TEXT AND TERMINATE WITH ^Z
tape drive MTA0: losing vacuum
12:12:12        --MTA0: UNAVAILABLE--
OPR>
```

3.3.2 Returning Tape Drives To Service

To return a drive to MOUNTR's control and make it available for user MOUNT requests, use the SET command with the TAPE-DRIVE keyword and the AVAILABLE argument. With this command, you must also give the drive name of the unit you are making available - either MTA0: or MTA1:.

----Example 16----

```
OPR> set tape-drive MTA0: available
14:14:14        --MTA0: Available--
OPR>
```

3.3.3 Checking Tape Drive Status

To determine the status of the tape drives, use the SHOW command with the STATUS keyword and the TAPE-drive argument. You can also use switches with this command:

/ALL — DISPLAYS the status of all the tape drives on the system. The following information will be printed:

1. the unit number of the tape drive (MTA0: or MTA1:)
2. the current state of the tape drive (in use, Loaded, or Unloaded)
3. the volume id of the volume on the drive
4. the number assigned to the request
5. the job number assigned to the user
6. the name of the user
7. the status of AVR on the drive
8. the mode of the tape (WRITE-ENABLED or READ-ONLY)
9. the label-type of the tape (TOPS-20, ANSI, EBCDIC, or Unlabeled)
10. the density at which the data on the tape was written (800 or 1600 BPI)

/FREE — DISPLAYS the tape drives that are available to you for mounting tapes. The information displayed includes all the information specified above for the /ALL switch.

/CHARACTERISTICS DISPLAYS the following information:

1. the name of the drive (MTA0: or MTA1:)
2. the type of drive (9-track)
3. the densities available on the drive

----Example 17----

```
OPR> show status tape-drive mta0: /all
13:14:15        --Tape Drive Status--
DRIVE     STATE       VOLID       REQ#     JOB#     USER
-----     -----       -----       ----     ----     ----
MTA0:     In Use      MYTAP       123      23       B1.BLUTO
          AVR: Yes, Write: No, TOPS-20 labels, 1600 BPI
MTA1:     Unloaded
MTA2:     Unavailable
OPR>
```

3.3.4 Switching Tape Drives Between Chip And Dale

Two tape drives are shared between Chip and Dale, with MTA0: normally assigned to Dale and MTA1: to Chip. But the drives can be switched between the two, as the following example demonstrates. In the example, MTA0: is de-assigned from Dale and assigned to Chip.

----Example 18----

On Dale:

```
OPR>show stat tape
OPR>
16:23:13          --Tape Drive Status--
     DRIVE  STATE      VOLID   REQ   JOB   USER
     -----  -----      ------  ----  ----  ----
     MTA0:  Unloaded
     MTA1:  Unavailable
OPR>set tape mta0: unavailable
Enter text and terminate with Z
moving it to Chip
^Z
OPR>
16:23:40          --Tape Drive Set Unavailable--
               MTA0: set unavailable for assignment by MOUNTR
OPR
```

On Chip:

```
OPR>
OPR>set tape mta0: availABLE (For Use By System)
OPR>
16:24:00          --Tape Drive Set Available--
                MTA0: set available for assignment by MOUNTR
OPR>
```

3.3.5 Mounting Tapes

The procedure for mounting tapes in response to user MOUNT requests differs, depending on whether the tape is labeled (TOPS-20, ANSI, or EBCDIC) or unlabeled.

Tapes are labeled or unlabeled depending on whether or not they have an internal label. All tapes have orange external labels.

3.3.5.1 Mounting Labeled Tapes -

If a user requests that a labeled tape be MOUNTed,

1. find the tape in the racks
2. make sure that the user is authorized to use the tape by checking the orange external label. The user requesting the MOUNT must either be the owner of the tape or the user's name must be included in the "Other Authorized Users" section. (It is possible that some tapes will have "any user" or a similar phrase written in this section.)
3. If you cannot find the tape or the user does not have authorization to use the tape, see the next section on the CANCEL command.
4. Check the MOUNT request to determine if the user has requested WRITE-ENABLED or READ-ONLY mode for the tape. If WRITE-ENABLED has been requested, put a "write ring" in the tape. If the user has requested READ-ONLY mode, do not put a ring in the tape.
5. Mount the tape on an available drive. MOUNTR will automatically read the label and give the user access to the drive.
6. You do not have to do anything else.

----Example 19----

```
OPR>
09:23:34          --Tape Mount Request #3--
                Mount Volume JUNQUE,  WRITE-ENABLED
                User R1.RAT, Job 12, Terminal 43

     [find the tape, check the label, and mount the tape]
```

```
OPR>
09:24:36        --MTA0: Volume JUNQUE TOPS-20 labeled tape mounted--
OPR>
09:24:36        --MTA0: Given To Request #3--
                Volume JUNQUE now in use by
                User R1.RAT, Job 23, Terminal 43
```

When the user finishes using the tape, he will issue a DISMOUNT TAPE command. OPR will print a message on the console.

```
OPR>
09:45:23        --Tape Drive Released by USER--
                MTA0:  Volume JUNQUE being Unloaded
OPR>
```

Remove the tape from the drive and replace it in the racks.

3.3.5.2 Mounting Unlabeled Tapes -

If a user requests a MOUNT for an unlabeled tape, one additional OPR command is required. Because the tape has no label, MOUNTR cannot identify the tape itself. You must therefore use the IDENTIFY command to tell MOUNTR the name of the tape.

1. Follow steps 1 through 4 above.
2. Mount the tape on an available drive.
3. Use the IDENTIFY command to tell MOUNTR the name of the tape.

----Example 20----

```
OPR>
13:14:15        --Tape Mount Request #5--
                Mount Unlabeled Tape Volume T97654
                User W1.WAFFLE, Job 23, Terminal 34

     [find the tape, check the label, and mount the tape]

OPR>
13:15:17        --MTA1:  Unlabeled tape mounted--
OPR> identify mta1: request-id 5
OPR>
13:15:57        --MTA1:  Given To Request 5--
                Volume T97654 now in use by
                User W1.WAFFLE, Job 23, Terminal 34
OPR>
```

3.3.6 Canceling A MOUNT Request

If you must cancel a user MOUNT request, use the CANCEL command with the MOUNT-REQUEST keyword. You must also include the number of the MOUNT request. Normally, you will only cancel mount requests if the tape cannot be found, or if the user requesting the tape is not authorized to use it. (See Section 3.3.5.0.) You should include the /REASON switch when canceling a mount request.

----Example 21----

```
OPR>
17:15:13        --Tape Mount Request #34--
                Mount Volume T91234, WRITE-ENABLED
                User R1.RAT, Job 12, Terminal 43

     [try to locate the tape]

OPR> cancel mount-request 34/reason:I could not find the tape
OPR>
17:16:15        --Mount Request 34 Canceled--
OPR>
```

The reason is entered into an I/O log, which is printed each time system reloads.

3.3.7 Initializing Tapes

All tapes for usage on the DECsystem-20 are initialized on the MVS system. If users ask you to label tapes for them (by mail, or via a PLEASE request) tell them to read the Tape Manual (TAPEMAN in DOCLIST) or the file NOTES:TAPES for instructions.

REPLY #4/REA: xxxxx

3.4 CONTROLLING THE DISK DRIVES

REPLACED

The disk drives can also be switched between Chip and Dale. This usually happens when either system is down; to accommodate users, all of the malfunctioning system's domestic structures (e.g., CS1: or DS1:) will be mounted on the functioning system. (If you do not know how to physically mount and dismount disk packs, consult Appendix F.)

3.4.1 Mounting Disk Packs From A Crashed System

After one of the DECs crashes, its disk packs can be mounted on the other system. In the following example, Dale has gone down, and its packs (DALE: and DS1:) are remounted on Chip, starting with DALE:.

----Example 22----

First change the dual porting switch on the appropriate drives from A (the default system) over to B, then mount the structure.

```
@enab
$mount structure dale:
[Mount Request DALE Queued, Request-ID 63]
16:25:03          --STRUCTURE MOUNTED--
                Structure DALE: mounted
Structure dale: mounted
$pop
OPR>
OPR>set structure dale: unregulated
OPR>
16:25:13          --STRUCTURE STATUS SET--
              dale: set UNREGULATED for use by system
OPR>set stru fe: domestic
OPR>
16:25:19          --STRUCTURE STATUS SET--
              dale: set DOMESTIC for use by system
OPR>show stat disk
OPR
16:25:27          --Disk Drive Status--

        FREE DRIVES:

        Type  Chan Ctrl Drive     Structure
        ----  ---------------     ---------
        RP06    0       3         SHARE: (1 OF 1)
        RP07    1       0         Offline
        RP07    1       1         Offline

        MOUNTED DRIVES:

        Structure     Type Chan Ctrl Drive Count Options
        ------------- ---- --------------- ----- -----------------
        DALE:         RP06   0         0   1     Domestic Unregulated
```

```
Available
                                                    Acknowledged
        CHIP:          RP07   1          2   0     Domestic Unregulated
Available
                                                    Acknowledged
        CS1:           RP07   1          3   0     Domestic Unregulated
Available
                                                    Acknowledged

OPR
```

3.4.2 Remounting Disk Packs Onto A Restored System

The following example shows how a pack is remounted on a system which has just come back up. In this case, Dale was down but is now up. DS1: has to be moved back, but it must be dismounted from Chip first before it is mounted on Dale; otherwise the data on the pack will be destroyed.

----Example 23----

First warn users on Chip:

```
OPR>send * Dale will be coming up in 5 minutes. DALE: and
     DS1: will be dismounted in 5 min.
```

Wait five minutes, then warn users again:

```
OPR>send * DALE: and DS1: are now being dismounted
```

Now remount the packs.

```
OPR>show stat disk              <== from Chip console
OPR>
16:36:13          --Disk Drive Status--

  FREE DRIVES:

  Type  Chan Ctrl Drive     Structure
  ----  ---------------     ---------
  RP06     0       1        Offline
  RP07     1       0        Offline
  RP07     1       1        Offline

  MOUNTED DRIVES:

  Structure     Type Chan Ctrl Drive Count Options
  ------------- ---- --------------- ----- -----------------
  FE:           RP06   0         0    0     Foreign Regulated Available
                                             Acknowledged
  DS1:          RP06   0         3    1     Foreign Regulated Available
                                             Acknowledged Name: SHARE
```

```
    RICH:          RP06   0          4   1      Foreign Regulated Available
                                                 Acknowledged
    CHIP:          RP07   1          2   0      Domestic Unregulated Available
                                               Acknowledged
    CS1:           RP07   1          3   2      Domestic Unregulated Available
                                               Acknowledged

OPR>dismount structure ds1:
OPR>
16:36:33 <8>       --DISMOUNT QUERY--
                Removal of structure SHARE: (Alias DS1:) requested.
                Other jobs are currently using it.  Should
                removal request be processed (YES or NO)?
                User OPERATOR, Job 0, DETACHED
OPR>respond (to message number) 8 yes
OPR>
16:37:02          --STRUCTURE DISMOUNTED--
                Structure SHARE: (Alias: DS1) dismounted
16:37:02          --DISMOUNT STRUCTURE--
                Remove SHARE: (alias DS1:)
                User OPERATOR, Job 0, DETACHED

     MOUNTED DRIVES:

     Structure      Type Chan Ctrl Drive Count Options
     -------------- ---- --------------- ----- -----------------
     DS1:           RP06   0          3

OPR>show stat disk
OPR>
16:37:20          --Disk Drive Status--

  FREE DRIVES:

  Type  Chan Ctrl Drive     Structure
  ----  ---------------     ---------
  RP06    0       1         Offline
  RP06    0       3         SHARE: (1 OF 1)
  RP07    1       0         Offline
  RP07    1       1         Offline

  MOUNTED DRIVES:

  Structure      Type Chan Ctrl Drive Count Options
  -------------- ---- --------------- ----- -----------------
  FE:            RP06   0          0   0      Foreign Regulated Available
                                                 Acknowledged
  RICH:          RP06   0          4   1      Foreign Regulated Available
                                               Acknowledged
  CHIP:          RP07   1          2   0      Domestic Unregulated Available
                                                 Acknowledged
  CS1:           RP07   1          3   2      Domestic Unregulated Available
                                                 Acknowledged
```

```
OPR>
OPR>dismount structure dsl:
? No such device
OPR>
```

Be sure to keep trying to dismount the pack until system tells you that no such structure is mounted.

Mounting Disk Packs From A Crashed System

After one of the DEC's crashes, it may be necessary to mount the disk structures (crashed system) on the other system. In the following example, Dale has gone down, and its structures (DALE:, DS1:, and DS2:) are being made available on CHIP.

First, set the online/offline SWITCES on the above structures to OFFLINE. Then change the dual proting SWITCHES on DALE: and DS1: from A (the default system) to B. Change the Switch on DS2: from B (the default system) to A. After the dual porting switches have been switched, place the online/offline switches back to the online position, then mount the structures, by following the steps below.

```
OPR>push
@enable
$mount structure dale:
 [mount request DALE Queued, Request-id 5]
 hh:mm:ss              --STURCTURE MOUNTED--
                   Structure DALE: mounted

 $mount structure DS1:
 [mount request DS1 Queued, Request-ID 6]
 hh:mm:ss                 --STRUCTURE MOUNTED--
                      Structure DS1: mounted

 $mount structure DS2:
 [mount request DS2 Queued, Request-id 7]
                      Structure DS2: mounted
  hh:mm:ss                   --STRUCTURE MOUNTED--

 $POP
OPR>
OPR>set structure dale: unregulated
OPR>
hh:mm:ss          --STRUCTURE STATUS SET--
            DALE: set UNREGULATED for use by system
OPR>
OPR>set structure dale: domestic
OPR>
OPR>set structure DS1: unregulated
OPR>
hh:mm:ss          --STRUCTURE STATUS SET--
           DS1: set UNREGULATED for use by system
OPR>
hh:mm:ss            __STRUCTURE STATUS SET__
          DALE: set DOMESTIC for use by system
OPR>
OPR>set structure ds1: domestic
OPR>
hh:mm:ss          --STRUCTURE STATUS SET--
          DS1: set DOMESTIC for use by ststem
OPR>
OPR>set structure ds2: unregulated
OPR>
hn:mm:ss          --STRUCTURE STATUS SET--
          DS2: set UNREGULATED for use by system
OPR>
OPR>set structure ds2: domestic
OPR>
hh:mm:ss           --STRUCTURE STATUS SET--
          DS2: set DOMESTIC for use by system
```

```
OPR>
OPR>sho stat disk
OPR>
hh:mm:ss          --disk drive status--
```

FREE DRIVES:

Type	chan	ctrl	drive	Structure
RP07	1	0		Offline
RP07	1	1		Offline

MOUNTED DRIVES:

Structure	Type	Chan	Ctrl	Drive	Count	Options
DALE:	RP07	0		0	1	Domestic avaiaable unregulated Acknowledged
DS2:	RP07	1		0	0	Domestic available unregulated Acknowledged
DS1:	RP07	1		2	1	Domestic available unregulated Acknowledged
SHR:	RP06	0		2	0	Foreign regulated available Acknowledged
CS2:	RP07	0		5	2	Domestic unregulated available Acknowledged
CS1:	RP07	1		3	0	Domestic unregulated available Acknowledged
CHIP:	RP07	1		4	3	Domestic unregulated available Acknowledged

NOTE: The SHR structure may show up in the FREE STATUS

---done: (for now)---

DISMOUNTING AND RETURNING DISK STRUCTURES TO A RESTORED SYSTEM

The following example shows how to dismount and return disk structures to their proper system, when that system becomes operational. In this case, DALE was down but is now ready to be reloaded. DS1:,DS2:,and DALE: must be dismounted on CHIP first and switch back to DALE before reloading DALE; otherwise the data on the packs will be destroyed.

3 First warn users on CHIP <==== from chip

```
OPR>send all Dale will be coming up in 5 minutes.  DALE:,DS1: and DS2:
will be dismounted in 5 min.

OPR>set stru DALE: unavailable

        --STRUCTURE STATUS SET--
    DALE: set UNAVAILABLE for use by system
OPR>
OPR>set stru ds1: unavailable
OPR>
        --STRUCTURE STATUS SET--
    DS1: set UNAVAILABLE for use by system
OPR>
OPR>set stru ds2: unavailable
OPR>
        --STRUCTURE STATUS SET--
   DS2: set UNAVAILABLE for use by system
OPR>
```

Wait five minutes, then warn users again:

```
OPR>send all DALE:, DS1: and DS2: are being dismounted
OPR>
```

Now begin dismounting the structures.

```
OPR>dismount stru DALE:
OPR>
hh:mm:ss <x>     --DISMOUNT QUERY--
              Removal of structure DALE: requested.
              Other jobs are currently using it.  Should
              removal request be processed (YES or NO)?
              User OPERATOR, Job 0, DETACHED
OPR>respond (to message number) x yes
OPR>
xx:mm:ss           --STRUCTURE DISMOUNTED--
            Structure DALE:    dismounted
xx:mm:ss           --DISMOUNTED STRUCTURE--
              Remove DALE:
              User OPERATOR, Job 0, DETACHED
```

MOUNTED DRIVES:

Structure	Type	Chan	Ctrl	Drive	Count	Options
DALE:	RP07	0		3		

The above example applies to each structure to be dismounted. ex. (DS1: and DS2:)

Be sure to keep trying to dismount the packs until the system tells you that no such structure is mounted. (No such device)

```
OPR>
OPR>dimomunt structure DALE:
? No such device
OPR>
OPR>dismount structure DS1:
? No such device
OPR>
OPR>dismount structure DS2:
? No such device
OPR>
OPR>sho status disk
OPR>
hh:mm:ss                ---Disk Drive Status---

FREE DRIVES:

Type  Chan  ctrl  drive     structure
RP06    0           1       OFFLINE
RP07    1           0       OFFLINE
RP07    1           1       OFFLINE

MOUNTED DRIVES:

Structure     Type  Chan  Ctrl  Drive  Count  Options
FE:           RP06    0           0      0   Foreing regulated available Acknowledged
SHR:          RP06    0           2      0   Foreign regulated Available
                                               Acknowledged
CS2:          RP07    0           5      1   Domestic Unregulated Available
                                               Acknowledged
CS1:          RP07    1           3      0   Domestic Unregulated Available
                                               Acknowledged
CHIP:         RP07    1           4      2   Domestic unregulated available
                                               Acknowledged

OPR>
```

Now you are ready to switch the structures back to DALE.

Set the ONLINE/OFFLINE switches on DALE:, DS1:, and DS2:

Change the dual porting switches on DALE: & DS1: from 'B' to 'A'.
Change the dual porting switch on DS2: from 'A' to 'B'.

Dale is now ready to be loaded. Follow the procedure in the Dec20 OPERATOR's manual. (Chapter 4, page 39)

-done-

3.5 CONTROLLING THE LINE PRINTER

The following procedures deal with OPR commands that control the Dale line printer through LPTSPL. Keep in mind that only Dale has a printer; Chip does not.

3.5.1 Backspacing A File

Sometimes you will need to restart the file currently printing on the line printer. This could be because the printer ran out of paper in the middle of a job, or because the printer went offline for some reason while printing. When you restart a print job, what you are actually doing is backspacing the file to the beginning.

To backspace a file, use the BACKSPACE command with the PRINTER keyword and the /FILE switch.

----Example 24----

```
OPR> backspace printer 0 /file
OPR>
10:10:10        -- Printer 0 --Backspaced 1 File--
OPR>
```

3.5.2 Reprinting A File

Sometimes you will need to stop a job in-process on the printer so that it can be restarted at a later time. Two OPR commands are required to do this: REQUEUE to stop the in-process job, and RELEASE to start it printing again. Both of these commands take the PRINTER keyword. In addition, you need to enter the unit number of the printer, always 0, and the REQUEST-ID of the print job. You find the request-id by using the SHOW QUEUES PRINTER-JOBS command.

----Example 25----

```
OPR> show queues printer-jobs
OPR>
11:13:15        -- System Queues Listing --

Printer Queue:
Job Name    Req#    Limit        User
--------    ----    -----    ------------
* PRINT        9      108    H1.HERBERT
     On Unit:0  /Seq#:6543
     Started at 11:12, printed 24 of 68 pages
PRINT2        10       72    N1.NOODLE
There are 2 Requests in the Queue (1 in Progress)

OPR> requeue printer 0/request-id:9
OPR>
11:13:17        Printer 0  --Requeued--
                Job PRINT Req #9 for H1.HERBERT
OPR>
11:13:39        Printer 0  --End--
                Job PRINT Req #9 for H1.HERBERT
OPR>
```

Later, when you want to start the job printing again:

```
OPR> release printer-jobs/request-id:9
OPR>
12:13:12        --1 Job Released--
OPR>
```

3.5.3 Skipping To The Next File

If you need to stop printing the current job, and go on to the next, use the FORWARDSPACE PRINTER command. In addition, you need the unit number of the printer, always 0, and the switch /FILE.

----Example 26----

```
OPR> forwardspace printer 0/file
OPR>
14:16:18        Printer 0   --Forwardspaced 1 File--

OPR>
```

3.5.4 Restarting The Printer

If you need to restart the printer after a paper jam or some other event that causes it to go offline, use the START PRINTER command. In addition, you need to give the unit number of the printer, always 0.

----Example 27----

```
OPR> start printer 0
OPR>
17:16:15        Printer 0   --Startup Scheduled--
OPR>
17:16:17        Printer 0   --Started--
OPR>
```

3.6 CONTROLLING THE PLOTTER

If the plotter gets hung, it can be restarted by following the procedures in the example.

AT MASTER CONSOLE: ----EXAMPLE 28----

```
OPR> push
$sy operator
$^x                    <=== to get to PTYCON
PTYCON>c splot
PTYCON>^c^c
$reset
$run splot
$^x
PTYCON>c oper
PTYCON>pop
OPR>start plot 0
OPR>
```

3.7 CONTROLLING JOBS

The following procedures allow you to control batch jobs. The OPR commands used in these procedures 'talk' to BATCON, the batch job controller.

3.7.1 Checking The Batch Queue

To check the contents of the batch queues (the number of batch jobs waiting to execute), use the SHOW QUEUES command with the BATCH-JOBS argument. The output of the SHOW QUEUES BATCH-JOBS command includes the following information for each job that is running in batch or waiting to run:

1. the name of the job
2. the request-id number of the job
3. the scheduled run-time of the job
4. the name of the user who submitted the job

----Example 29----

```
OPR> show queues batch-jobs
OPR>
13:16:19        --System Queues Listing--

Batch Queue:
Job Name    Req#    Run Time          User
--------    ----    --------    ----------------
* FPRINT      12    00:05:00    A1.ALPHA
    In Stream:0
    Job# 14 Running MACRO Runtime 0:02:03
    /Uniq:Yes /Restart:No /Seq#:1213
* ACCOUN      10    00:10:00    PRODS.DEC
    In Stream:1
    Job# 2 Running ACT20 Runtime 0:03:04
    /Uniq:Yes  /Restart:Yes /Seq#:1210
  SPTRY         1    00:05:00    U1.USER
                /After: 2-AUG-83 00:00:01 /Uniq:yes
                /Restart:No /Seq#:1111
There are 3 jobs in the Queue (2 in Progress)

OPR>
```

NOTE: the * indicates a job in progress

3.7.2 Canceling A Job

To cancel a batch job, use the ABORT command. In addition, you need to enter the number of the batch stream, the /REQUEST-ID switch, and the /REASON switch. To find the REQUEST-ID of the job you want to cancel, use the SHOW QUEUES BATCH-STREAM command.

----Example 30----

```
OPR> show queues batch-stream

Batch Queue:
Job Name    Req#    Run Time          User
--------    ----    --------    --------------------
* TDIR        23    00:05:00    B1.BOILS          In stream:0
    Job#12 Running MACRO Runtime 0:00:56
    /Uniq:Yes /Restart:no /Seq#:0794
  FORTRA      27    00:03:00    P1.PASTY
    /After: 5-AUG-83 00:00:01 /Uniq:Yes
    /Restart:Yes /Seq#:6420
There are 2 Requests in the Queue (1 in Progress)
OPR> abort batch-stream 0/request-id:23/reason:tape not found
OPR>
08:23:56        Batch-stream 0      JOB #12      --ABORTED--
                Job TDIR Req #23 for B1.BOILS
                TAPE NOT FOUND with ERROR PROCESSING
OPR>
08:24:00        Batch-stream 0  --End--
                Job TDIR Req #23 for B1.BOILS
                -- Job Aborted by Operator --
OPR>
```

3.7.3 Restarting A Job

If you need to restart a batch job, you must use two OPR commands: the REQUEUE command to stop processing on the job, and, the RELEASE command to start the job again when you are ready. ~~Both commands take the BATCH-STREAM keyword.~~ In addition, you need to supply the number of the batch-stream (0 thru 5) and the request-id number of the job.

To find the REQUEST-ID, use the SHOW QUEUES BATCH-JOBS command.

----Example 31----

```
OPR> show queues batch-streams

Batch Queue:
Job Name    Req#    Run Time          User
--------    ----    --------    --------------------
* TDIR        23    00:05:00    B1.BOILS            In stream:0
    Job#12 Running MACRO Runtime 0:00:56
    /Uniq:Yes /Restart:no /Seq#:0794
  FORTRA       27    00:03:00    P1.PASTY
    /After: 5-AUG-81 00:00:01 /Uniq:Yes
    /Restart:Yes /Seq#:6420
There are 2 Requests in the Queue (1 in Progress)

OPR> requeue batch-stream 0/request-id:23
OPR>
14:16:17        Batch-stream 0  --Requeued--
                Job TDIR Req #23 for B1.BOILS
OPR>
14:16:39        Batch-stream 0  --End--
                Job TDIR Req #23 for B1.BOILS
OPR>
```

Later, when you want to start the job executing again:

```
OPR> release batch-jobs/request-id:23
OPR>
15:23:42        --1 Job Released--
OPR>
```

3.8 LOGGING OUT A USER

If you need to log out a user whose job has become detached or whose terminal is hung, you should

1. PUSH out of OPR
2. do a SYSTAT to determine the user's Job number
3. ENABLE
4. give the LOGOUT command
5. POP back to OPR

----Example 32----

```
OPR> push

TOPS-20 Command processor 5(712)
@systat
 Mon 25-JUL-83 09:45:57  Up 21:21:03
 10+7 Jobs   Load av   1.17   1.21   1.58

 Job  Line Program  User
   4    52  EXEC     STAFF.ADVISOR
   5    55  DET      STAFF.TED       <== job 5 has been detached
   6    26  1022     S1.SIRS
   8    57  1022     T1.TELECOM2
  16    67  EXEC     Not logged in
  18    23  1022     S1.SIRS
  21    21  1022     S1.SIRS
  24    40  1022     S1.SIRS
  25     6  1022     SPSS.ISSUE
  34    51  EXEC     STAFF.JUDAH

   1   205  PTYCON   OPERATOR
   2   221  BATCON   OPERATOR
   3   222  SPLOT    OPERATOR
   4   223  MAILER   OPERATOR
   5   224  WATCH    OPERATOR
   7   225  IBMSPL   OPERATOR
  10   226  SHRSRV   OPERATOR
  11   227  OPR      OPERATOR
  13    53  OPR      OPERATOR
  14    72  OPR      OPERATOR
@enable
$logout 5
$pop
OPR>
```

This procedure can also be used with batch jobs that are hung, just get the batch job number by using the show stat batch-status command.

3.9 CONTROLLING THE DEC/MVS LINK

There are two separate links between the two DECs and the MVS system on the Center's IBM 3081. Though the same software on each DEC handles the link to MVS, it is quite possible for one of the links to be down while the other is still operational. From time to time you may need to check whether ~~the~~ either link is actually running. To do this, follow the sequence of commands listed below.

1. Give the show batch-stream status command twice to see if the number of bytes transferred has increased from the first command to the second.

2. If the number has increased, then the link is running. If both devices are "Idle", ascertain that there actually are jobs to be run (on the DEC side or MVS side). Even if there are no jobs running, you can send message to MVS and see if it returns as a "Console Output" on the DEC.

3. If the link is not running, you should try restarting the link.

----Example 33----

```
OPR>show status batch-stream
OPR>
14:39:00                -- System Device Status --
Batch-Stream Status:
  Strm      Status
  ----  ---------------
     0  Idle
     1  Idle
     2  Idle
     3  Idle
     4  Idle
     5  Idle

14:39:01          -- IBM emulation node IBM device status --

       Device          Status                  Seq   Jobname  Username
  -----------   ----------------------   ----  -------  --------
  Line printer  Idle
  Card punch    Idle
  Card reader   Sending job              3515  WAR      T1.TOLSTOY
    Started at: 2-Aug-83 14:36:41 transferred 61440 bytes

14:39:01          -- IBM emulation node MVS device status --

       Device          Status                  Seq   Jobname  Username
  -----------   ----------------------   ----  -------  --------
  Line printer  Idle
  Card punch    Idle
  Card reader   Sending job              3527  PEACE    T1.TOLSTOY
    Started at: 2-Aug-83 14:38:02 transferred 132455 bytes
```

```
OPR>sho stat batch-stream
OPR>
14:39:51                -- System Device Status --
Batch-Stream Status:
  Strm      Status
  ----  ---------------
     0  Idle
     1  Idle
     2  Idle
     3  Idle
     4  Idle
     5  Idle

14:39:52          -- IBM emulation node IBM device status --

      Device          Status                  Seq   Jobname  Username
     -----------   ----------------------   ----  -------  --------
     Line printer  Idle
     Card punch    Idle
     Card reader   Sending job              3515  WAR      T1.TOLSTOY
       Started at: 2-Aug-83 14:36:41 transferred 66560 bytes

14:39:52          -- IBM emulation node MVS device status --

       Device          Status                  Seq   Jobname  Username
     -----------   ----------------------   ----  -------  --------
     Line printer  Idle
     Card punch    Idle
     Card reader   Sending job              3525  PEACE    T1.TOLSTOY
       Started at: 2-Aug-83 14:38:02 transferred 137100 bytes
```

(The number of bytes transferred increased from the first command to the second. If both "devices" show "Idle", ascertain that there actually are jobs to be run.)

[for MVS]

```
OPR>sho queue batch /node:mvs::
OPR>
14:40:23                -- System Queues Listing --
Batch Queue:
Job Name  Req   Run Time         User
--------  ----  --------  --------------------
  TRIAL      6  00:05:00  01.OPTIMIST       Hold:Yes  /Proc:IBM
There is 1 Job in the Queue (None in Progress)
```

On the MVS Console:

[for Chip] $DQ,CHIP

or [for Dale] $DQ,DALE

DON'T WORK

(Even if there are no jobs running, you can give the following command on the OPR console:

[for MVS]

[on Chip]
OPR>send batch 0 /node:mvs:: $dmr21, 'your message'

[on Dale]
OPR>send batch 0 /node:mvs:: $dmr11, 'your message'

After about a minute, you should see a 'Console Output' message on the DEC containing your message (richocheting throught the link to the 3081 and back).

If you are certain the link is not working, you can restart it as follows:

CHIP

[Problem with the MVS link on Chip]

OPR>shut node mvs::
$ELNE21 <== enter on the MVS console
OPR>start node mvs::

DALE

[Problem with the MVS link on Dale]

OPR>shut node mvs::
$ELNE11 <== enter on the MVS console
OPR>start node mvs::

(You should see a message that the link was shut down, then another to the effect that it was restarted and is "online". If there are jobs waiting to be run, they should run; if not, try the message test described above.)

If all else fails, try a full start. It can be a bit tricky, so if you don't feel comfortable doing it, ask someone who does. The full start procedures are:

1. Shut down the link.
2. Connect to the job (running under OPERATOR) in which the IBMSPL spooler runs.
3. Run DNLOAD to reload the front end PDP-11 which handles the link.
4. Start the IBMSPL again.
5. Leaving IBMSPL running, reconnect to your original job
6. Give OPR, MVS commands to restart the link.

Warning: you must use the main console to restart.

FROM MASTER CONSOLE

----Example 34----

```
Chip:
OPR>shut node mvs::                    OPR CONSOLE
$PLNE21                                <== on MVS console
$ELNE21                                <== on MVS console
OPR>^x^x
PTYCON>connect ibm
[Connected to Subjob IBM(3)]
$^c^c
$connect
$reset
$dnload
DNLOAD>load dte 1 sys:d6tkh<ESC><ESC> (LISTENING ON) dl1:
DNLOAD>exit
$[redacted] ibmspl
^x^x
PTYCON>conn opr
[Connected to Subjob OPR()]
OPR>start node mvs::
OPR>rel b *
```

CHIP

DL1

$SLNE21 ← MVS CONSOLE

OPR CONSOLE

----Example 35----

```
Dale:
OPR>shut node mvs::
$PLNE11                                <== on MVS console
$ELNE11                                <== on MVS console
OPR>^x^x
PTYCON>conn ibm
[Connected to Subjob IBM(3)]
$^c^c
$connect
$reset
$dnload
DNLOAD>load dte 2 sys:d6tkh<ESC><ESC> (LISTENING ON) dl2:
DNLOAD>exit
$[redacted] ibmspl
^x^x
PTYCON>conn opr
[Connected to Subjob OPR()]
OPR>Start node MVS::
OPR>rel b *
```

DALE

DL2

$SLNE21 ← MVS

In both cases, after giving the LOAD command, wait for DNLOAD to return with its prompt. After DNLOAD loads the PDP-11, it will attempt to read a status message from the 11. But this message can be truncated depending on the DEC's load. So if DNLOAD generates any output, ignore it -- unless it is an obvious error message.

CHAPTER 4

THE MAIN CONSOLES - THE OPERATOR'S CTYS

4.1 THE MAIN CONSOLE AND PTYCON

The "main" consoles are located next to Chip and Dale's disk drives, one for each computer. They are called the operators' CTYs (for control terminals) are the terminals you use for reloading the systems. These terminals can also be used to run OPR, should the OPR consoles fail.

The operator's CTY normally runs under a program called PTYCON. PTYCON is automatically started whenever the TOPS-20 monitor is started (i.e., when the system is IPL'd). You can tell if the terminal is running at PTYCON level by the PTYCON> prompt. It is the controlling job for several subjobs - the processes you usually communicate with through OPR. Although it is possible to communicate with the subjobs through PTYCON, OPR was designed especially to do that and should always be used. One of the subjobs running under PTYCON is subjob 0 (the letter 'oh,' not zero) which runs in the EXEC (that is, at TOPS-20 level). The operator's CTY will usually be connected to this subjob. If you see an @ sign on the terminal (the TOPS-20 prompt), that means that the terminal is running in the EXEC.

NOTE

If you need to return to PTYCON at any time, type ^X. From any subjob, ^X will return you to PTYCON level.

4.2 OPERATOR TASKS ON THE MAIN CONSOLE

Most operator tasks are performed on the OPR console. However, the main console is used whenever the system needs reloading.

4.2.1 Reloading The System

To reload the system, all power must be on and the packs properly mounted.

1. Press the upper half of the DISK switch; then, while holding it down, press the upper half of the ENABLE load switch. You will find the switches in the cabinet just to the right of the DECsystem-20 label. The following will be output on the CTY:.

```
RSX-20F YB13-41D 14:01 25-JUL-83

[SY0: REDIRECTED TO DB0:]
[DB0: MOUNTED]
KL1 -- VERSION VB12-12 RUNNING.
KL1 -- KL10 S/N: 2163, MODEL B, 60 HERTZ
KL1 -- KL10 HARDWARE ENVIRONMENT:
         INTERNAL CHANNELS
         CACHE


KL1 -- MICROCODE VERSION 231 LOADED
KL1 -- ALL CACHES ENABLED

LOGICAL MEMORY CONFIGURATION:
ADDRESS   SIZE  INT   TYPE CONTROLLER
00000000  7[illegible]K  4    MB20  10
01000000  7[illegible]K  4    MB20  11

KL1 -- CONFIGURATION FILE WRITTEN
KL1 -- BOOTSTRAP LOADED AND STARTED


[DALE: MOUNTED]

SYSTEM RESTARTING, WAIT...
```

← CHECK

The SYSTEM RESTARTING, WAIT... message is output to all terminals, and the system types:

```
ENTER CURRENT DATE AND TIME:
```

←

2. You should respond with the current date and time in the form of DD-MMM-YY HHMM where:

   DD = the day of the month
   MMM = first three letters of the current month
   YY = last two digits of the year
   HHMM = time from 0 to 2400 hours

3. The system prints a line giving the day, day of the week, the date, and the time you typed and asks you to confirm them with a Y for YES or an N for NO. If either date or time is incorrect, reply N and start again. If they are correct, type Y and continue.

```
ENTER CURRENT DATE AND TIME:  3-Aug-83 1010
YOU HAVE ENTERED THURSDAY, 3-AUGUST-1983 10:10AM,
IS THIS CORRECT (Y,N) Y
```

←

The system types:

WHY RELOAD?

a. Enter the proper action code (see list below) which explains the reason for reloading (include your initials for the log):

```
WHY RELOAD? ts jcc
```

b. Now the system prints:

```
RUN CHECKD?
```

You may type either Y for YES or N for NO. Unless instructed by a systems person you will always type N.

```
RUN CHECKD? N
```

c. Then the following messages are printed giving the version of SYSJOB and the date and time it started.

```
RUNNING DDMP

SYSJOB 4(11) STARTED AT 3-AUG-83 1015
```

The file PS:<SYSTEM>SYSJOB.RUN is then output.

```
RUN SYS:ORION
RUN SYS:QUASAR
RUN SYS:MOUNTR
RUN SYS:INFO
RUN SYS:MAILER
RUN SYS:MAPPER
RUN SYS:LPTSPL
JOB 0 /LOG OPERATOR XX OPERATOR
ENA
ESET LOGIN PSEUDO
ESET LOGIN CONSOLE
ESET OPERATOR
PTYCON
```

Now SYSJOB prints what was done by the job it started via JOB 0/LOG OPERATOR.

```
SJ  0:
SJ  0:  UofC Computation Center, DEC-2060 {DALE}, TOPS-20 Monitor 5(4747)
SJ  1:
SJ  1:  UofC Computation Center, DEC-2060 {DALE}, TOPS-20 Monitor 5(4747)
SJ  0: @LOG OPERATOR OPERATOR
SJ  0:   JOB 1 ON TTY206 3-AUG-83 10:15:00
SJ  1: @LOG OPERATOR OPERATOR
SJ  1:   JOB 2 ON TTY207 3-AUG-83 10:15:09
```

```
SJ  0:   END OF LOGIN.CMD.9
SJ  1:   END OF LOGIN.CMD.9
SJ  1: @ENA
SJ  1: $RUN SYS:BATCON
SJ  0:
SJ  0: @ENA
SJ  0: $^ESET LOGIN PSEUDO
SJ  0: $^ESET LOGIN CONSOLE
SJ  0: $^ESET OPERATOR
SJ  0: $PTYCON
SJ  0: PTYCON> GET SYSTEM:PTYCON.ATO
SJ  0: PTYCON> SILENCE


[From OPERATOR on line 210: SYSTEM IN OPERATION]
 UofC Computation Center, DEC-2060 {DALE}, TOPS-20 Monitor 5(4747)
@ATTACH OPERATOR 1
 [Attached to TTY206, confirm]
Password:
```

When all the output to your control terminal stops, the system is ready for timesharing. The front end and TOPS-20 monitors are running, an OPERATOR job is running PTYCON, and OPR is running on the OPR console.

(One important exception to the following procedure for attaching occurs when you have a PWRRES bugchk. If you run into this particular power failure, consult the procedure for STARTING OPERATOR JOBS AFTER A PWRRES BUGCHK in section 4.3 of this manual.)

After reloading the system, or after an automatic system restart, fill out a SNAFU report and give it to the shift supervisor.

4.2.2 Action Codes

The following are the action codes you should use when the system asks you the reason for reloading. You only need to type the code, not the explanation. It is important to use the correct code because DEC guarantees a certain percentage at uptime.

1. BUGHALT - System Crashed (itself)
2. HALT - System Halted (itself)
3. CR - System Crashed (forced)
4. PARITY - Parity Error
5. HARDWA - Unknown Hardware Failure
6. NXM - Nonexistent Memory
7. HUNG - System Hung

8. CM - Correcting Maintenance
9. LOOP - System Hung in a Loop
10. POWER - Power Failure
11. STATIC - Down Because of Static Electricity
12. OPR - Operator Error
13. PM - Preventive Maintenance (DEC PM)
14. NEW - Loading a New Monitor
15. SCHED - Scheduling Downtime (Holidays)
16. SA - Standalone (Systems Group Test Time)
17. OTHER - Other Followed By an Explanation (Environment Other Than Power Failure)

4.3 STARTING OPERATOR JOBS AFTER A *PWRRES* BUGCHK

There is one known exception to the normal disk load procedure.

If the DEC goes down with a power failure - a PWRRES bugchk - the system will reload but not with the OPERATOR job. Therefore, you will not have any of the subjobs that would normally be loaded, no PTYCON, no BATCON, no LPTSPL, etc. So, you have to start your own OPERATOR job by logging in as a normal user would, ENABLing, giving the PTYCON command after you receive the $ prompt, and then typing GET <SYSTEM>PTYCON which will run the PTYCON.ATO file and start all the subjobs again. You will get the message to attach to PTYCON, which you should ignore since you have already attached to PTYCON.

----EXAMPLE 36----

```
%DECSYSTEM-20 NOT RUNNING

POWER-FAIL RESTART
KLI -- VERSION YB12-12 RUNNING
KLI -- MICROCODE VERSION 231 LOADED
KLI -- ALL CACHES ENABLED

LOGICAL MEMORY CONFIGURATION:
ADDRESS   SIZE  INT  TYPE CONTROLLER
00000000  712K   4   MA20  0-81
01000000  712K   4   MB20  2-83

KLI -- KL RESTARTED

ATTEMPTING AUTOMATIC RESTART...
ATTEMPTING TO CONTINUE SYSTEM

******************
*BUGCHK "PWRRES" at 10-Aug-83 12:35:05
*POWER RESTART
******************

[DECsystem-20 continued]

 UofC Computation Center, DEC-2060,  TOPS-20 Monitor 5(4747)
@LOG OPERATOR password
 Job 4 on TTY205 10-Aug-83 13:30:55
END OF LOGIN.CMD.9
@ENABLE
$PTYCON
PTYCON> GET SYSTEM:PTYCON
PTYCON> SILENCE
PTYCON.LOG.1
```

After the messages stop, you should have a PTYCON prompt at your terminal and be completely logged in.

APPENDIX A

DEC-20 PERFORMANCE CHECK

The number of users on the system and the contents of all system queues (BATCON, LPTSPL, and MOUNTR) should be checked regularly.

1. The OPR console should display the OPR> prompt.
   If the prompt is not OPR> but @, type POP.

2. Type SHOW QUEUES
   OPR will print a listing of the contents of all of the system queues.

3. Type PUSH

4. After the @ prompt, type SYSTAT
   The system will print a list of the current users.

5. Type POP.
   The console should display the OPR> prompt.

6. If the system has been reloaded in the last hour (either by operator IPL or automatic system restart) check to see that a SNAFU report has been written. If not, fill one out.

----Example 37----

```
OPR> show queues
10:01:01        --System Queues Listing--

Batch Queue:
Job Name    Req#    Run Time           User
--------    ----    --------    --------------------
* TDIR        23    00:05:00    B1.BOILS           In stream:0
    Job#12 Running MACRO Runtime 0:00:56
    /Uniq:Yes /Restart:no /Seq#:0794
  FORTRA      27    00:03:00    P1.PASTY
    /After: 5-AUG-83 00:00:01 /Uniq:Yes
    /Restart:Yes /Seq#:6420
There are 2 Requests in the Queue (1 in Progress)

Tape/Disk Mount Queue:
Volume    Status    Type     Write     Req Name    Req#    Job#       User
------    ------    ----    -------    --------    ----    ----    ------------
T91234    MTA0       Tape   Enabled    T91234        12      32    F1.FOOBAR
ULUSER    Waiting    Tape   Locked     ULUSER        13      41    S1.SNARL
There are 2 Requests in the Queue

Printer Queue:
Job Name    Req#    Limit        User
--------    ----    -----    ------------
* PRINT        9      108    H1.HERBERT
```

```
     On Unit:0  /Seq#:6543
     Started at 11:12, printed 24 of 68 pages
PRINT2       10       72   N1.NOODLE
There are 2 Requests in the Queue (1 in Progress)
OPR> push

$systat
  9+7 Jobs   Load av   1.17   1.21   1.58

 Job  Line Program  User
   4    52  EXEC     STAFF.ADVISOR
   5    55  EXEC     STAFF.TED
   6    26  1022     S1.SIRS
   8    57  1022     T1.TELECOM2
  18    23  1022     S1.SIRS
  24    40  1022     S1.SIRS
  25     6  1022     SPSS.ISSUE
  34    51  SYSERR   SYSTEMS.ALDERSON
  37    27  1022     S1.SIRS

   1   205  PTYCON   OPERATOR
   2   221  BATCON   OPERATOR
   3   222  SPLOT    OPERATOR
   4   223  MAILER   OPERATOR
   5   224  WATCH    OPERATOR
   9   225  IBMSPL   OPERATOR
  10   226  SHRSRV   OPERATOR
  11   227  LPTSPL   OPERATOR
  13    52  OPR      OPERATOR
  14    72  OPR      OPERATOR
  15    82  OPR      OPERATOR
@pop
OPR>
```

APPENDIX B

DEC-20 OFFLINE COMPUTER ENTRIES

The DEC-20 offline log for each DEC is kept on a clipboard near the machine and is used for recording all system offline entries.

At the beginning of the shift the operator should scan through the DEC hardcopy log generated on the control console for 'BUGHLT' messages which indicate that the system has reloaded itself after a software or hardware error. To do this you should:

1. Go back to the line drawn by the previous shift, which indicates the end of that shift, and scan forward for messages having the indication
   ****
   *BUGHLT
   ****

2. When you find the above flag, scan the information following it for a time stamp. If there is a time stamp of the error and when the system reloaded itself, enter the times on the DEC log. If there is no time stamp, estimate the time and enter it into the DEC log.

3. At the end of your shift, draw a line across the DEC console output and print the date and time on it.

4. While you are looking for BUGHLTs, you may find that the system IPL'd itself for a hardware error such as CLOCK ERROR, etc. These should be logged as hardware errors in the manner described above.

There are other codes and entries listed at the bottom of the log which should be used when appropriate. When the daily log is completed at the end of the evening shift, put it on the Operations Clerk's desk.

The DEC-20 Hardware Maintenance log specifically records hardware downtime and maintenance. It is kept in DEC's Site Maintenance book and should be filled out whenever you need to call DEC about a hardware problem.

There is also a section in the supervisor's log that DEC operators should fill out at the end of each shift. Any messages that should be passed on to the next shift can be given to the Supervisor, who can enter them in the "shift remarks" section of the supervisor's log.

APPENDIX C

RESETTING THE FRONT END

C.1 FRONT END "LOCK UP"

Occasionaly the DEC-20 consoles will "lock up." This can happen when a dialup line is malfunctioning and the DEC thinks that a line is active when in reality it is not. When the system tries to send a message to all users, the DEC-20 continues to run but the front end (the PDP-11 which services teletype I/O) hangs, trying to send the message to that line.

System-wide messages are sent in a wide variety of circumstances. The most common are:

1. System-wide MAIL. This causes the system to announce to all users that a new message-of-the-day is available.

2. Informative messages like "System going down" or "System expunge completed". These are sent automatically by the monitor.

When the consoles "lock up" like this, you can reload the PDP-11 without having to reload the DEC-20. After the reload is done, the users' consoles will get a message

[DECSYSTEM-20 continued]

and everything should continue.

C.2 HOW TO RELOAD THE PDP-11.

1. Verify that the consoles have really locked up. Sometimes when the DEC-20 is very busy, it can take as long as a minute or two to echo what you typed, let alone process them. Type something on the OPR console (e.g. SHOW QUEUES). If, within 3 minutes, it is not echoed, proceed to step 2.

2. Go to the DEC-20 cabinet and open the door. You should see the PDP-11 there (blue box with switches and flashing lights). Locate the key marked ENABLE/HALT and move it from the ENABLE position (up) to the HALT position (down). Then set it back to ENABLE.

3. Within one minute, the main DEC-20 console should print out something like this:

SY0: REDIRECTED TO DB0:

[DECsystem-20 continued]

and the other consoles should start to run.

4. If this maneuver does not work, you will have to re-IPL the DEC-20. Note that this will cause all logged-in users to be logged out, while the procedure outlined in this section will not.

APPENDIX D

SYSTEM DIAGNOSTICS

D.1 THE KLAD SYSTEM

If you have determined that the system is down for hardware reasons, the following steps should be taken in notifying DEC and responding to their request to have the KLAD diagnostic disk and the KLDCP floppy disks.

1. Inform the shift supervisor that the DECsystem-20 is down.
2. Call Digital Diagnostic Center (DDC) at 800-525-6570.
3. Inform them that this is the The University of Chicago Computation Center (DECsystem-20 serial 2163 for Dale, and serial 83015129H for Chip, to forestall any confusion which may arise with the Business School system), give the Comp Center address (5641 S.Ingleside), leave your name and the DEC operator's number (962-7626).
4. Bring the system down and mount the KLAD pack on Drive 0, WRITE-ENABLED
5. Set the PDP 11/40 switch register to 203 octal
   This is switches 0, 1, 7 in UP position
6. Boot from SW REG switch and type a ^\ (Control backslash) on the console to get to PARSER. (PAR> prompt)
7. After the PAR> prompt, type M BOO
8. After the BOO> prompt, type DBOOT
9. WRITE PROTECT the KLAD pack and reset the PDP 11/40 switches to all 0s
10. When the KLINIK line rings, type KLINIK on the console
11. Follow all instructions given to you by the DDC.

APPENDIX E

MOUNTING & DISMOUNTING TAPES

E.1 MOUNTING TAPES

1. To begin tape mounting open the dust cover on the tape drive by pulling gently on the left side of the cover.

2. On the DEC tape drives the supply reel is located on top and the take-up reel is on the bottom.

3. Begin threading the tape by pulling the tape up and over the two top guide wheels. Now pull the tape down and to the left of the upper white guide wheel.

4. Next, the tape should go down and slightly to the right, under the tape head, then continue down and slightly to the left of the lower white guide wheel.

5. Finally, pull the tape around the capstan and up and over the take-up reel. Wind three or four turns of the tape leader onto the take-up reel, removing any slack left in the tape.

6. Next, check the tape path for proper seating of the tape in the guides and under the head.

7. Press the LOAD/RESET button.

8. Recheck the tape positioning after the tape has come to load point; if everything is okay close the dust cover door.

9. If the ONLINE light is not lit after the load cycle has completed, press the ONLINE switch. (The fileprotect light should be lit if there is no ring in the tape.)

E.2 DISMOUNTING TAPES

To dismount tapes, always use the OPR command, DISMOUNT TAPE.

APPENDIX F

MOUNTING & DISMOUNTING DISK PACKS

F.1 MOUNTING A DISK PACK

1. Slide back the cover on top of the drive.
2. Remove the bottom of the disk container by turning the handle located on the underside of the disk plate.
3. Slide the pack straight down on the disk drive hub.
4. Turn the cover clockwise until the pack is locked in position.
5. Pull the cover straight up and off the pack.
6. Close the drive cover and put the empty cover on top of the drive.
7. Push the START/STOP switch to the START position.
8. When the ready light is on the drive is ready.

F.2 DISMOUNTING A DISK PACK

1. Push the START/STOP switch to STOP and wait until the drive stops turning.
2. Slide back the drive cover.
3. Slip the disk pack cover straight down over the pack and turn the cover counter-clockwise.
4. Lift the pack straight up until it clears the drive.
5. Secure the bottom plate to the pack cover by means of the locking handle on the underside of the bottom plate.
6. Close the drive cover.

Warning

If you see any trace of silver powder while dismounting a pack, do NOT place another pack on that drive. CALL A SYSTEMS PROGRAMMER IMMEDIATELY. It is possible that the drive has suffered a head crash, and that the pack just removed has been damaged. Any attempt to place another pack on the drive will cause damage to a second pack.

APPENDIX G

LOADING & ADJUSTING THE PRINTER

1. Set the printer OFF/LINE by pressing the ON/OFF LINE switch to OFF/LINE (the light will go out).

2. Lift the cover

3. Unlatch and open the drum gate.

4. Press the TOP OF FORM switch to advance the tractors to the top of form position.

5. Open the tractor pressure plates. Place paper in the tractors either by over-lapping the paper or by inserting the proper fold of the paper - infold or outfold, depending on the last sheet printed. If this is the beginning of the printed output, an outfold sheet should be adjusted so that the top of the first green bar (line 5) on the paper corresponds to the bottom two print lines of the print line index. (This will overlap header printing on the perforations and make separation of output easier.) If you are in the middle of printing a job and the printer runs out of forms, it should end at the bottom of a page. You can either overlap the forms, or follow the adjustment procedure for new forms listed above. Make sure that the printer has printed the last line for that page before attempting to install a new box of paper. This will insure proper alignment of forms.

6. Close the tractor pressure plates.

7. If more vertical adjustment is needed, press the FORMS RESET switch and turn the tractor shaft by using the COARSE VERTICAL FORM ADJUSTMENT control.

8. Press the FORMS RESET switch again.

9. Close and latch the drum gate.

10. Press the ALARM/CLEAR switch.

11. Cycle the paper up to another outfold by pressing the TOP OF FORM switch twice.

12. Press and release the ON/OFF LINE switch to set the printer online. (The indicator should light.)

13. Use the FINE VERTICAL FORM ADJUSTMENT to correct any small misalignments - then close the printer cover.

APPENDIX H

SHUTTING DOWN THE DEC-20

To shutdown the DEC-20

1. PUSH out of OPR
2. type ENABLE after the @ prompt
3. Type ^ECEASE + N after the $ prompt
   where N is the number of minutes until the machine will go down. Under normal circumstances, N should be at least 30.
4. The System will type "LOGOFF PLEASE - SYSTEM GOING DOWN IN 30 MINUTES"
5. type POP after the $ prompt
6. You will be back in OPR.

----Example 38----

```
OPR> push

TOPS-20 Command processor 5(712)
@enable
$^Ecease+30
[confirm]   <CR>.
LOGOFF PLEASE - SYSTEM GOING DOWN IN 30 MINUTES

$pop
OPR>
```

/REASON 22

? 6

ABORT 32
Action codes 42

BACKSPACE 27
BATCON 3-4, 31

CANCEL 20, 22
  MOUNT-REQUEST 22
Command recognition 6
Console
  Lock-up 48

DELETE 2
DISMOUNT 51
Documentation
  Getting Started With TOPS-20 1
  MM 13
  NOTES:TAPES 22
  TOPS-20 Operator's Guide 1, 17
  TOPS-20 User Guide 1
  TOPS-20 Utilities Guide 1
DUMPER 4

ENABLE 13
ESCAPE 2

FORWARDSPACE 29
  PRINTER 29
Front End
  Reset 48

HELP 7

IDENTIFY 21
IPCF 3

KLAD 50
KLDCP 50
KLINIK 50

LOGOUT 33
LPTSPL 3-4

Mail
  System 13
  User 14
MM 13-14

ENABLE 13
QUIT 13-14
SEND 13-14
MOUNT 18, 20
MOUNTR 3, 17, 20-21

Offline log 47
OPR 3-4
ORION 3

PARSER 50
PLEASE 12
POP 33, 54
Printer
BACKSPACE 27
Loading 53
LPTSPL 27
Prompts
$ ii
@ 39, 45
BOO> 50
OPR> 45
PAR> 50
PTYCON> 39
PTYCON 39
PUSH 4, 10-11, 13-14, 45, 54
PWRRES BUGCHK 42-43

QUASAR 3

RELEASE 27, 32
BATCH-STREAM 32
PRINTER 27
REQUEUE 27, 32
BATCH-STREAM 32
PRINTER 27
RESPOND 12
RUBOUT 2

SEND 11
ALL 11
JOB 11
SET 17-18
TAPE-DRIVE 17-18
SHOW 8, 18
QUEUES 45
STATUS 8, 18
SHOW QUEUES
BATCH-STREAM 32
PRINTER-JOBS 27
SHRSERV 3
SPLOT 3
START 29
PRINTER 29

STATUS 18
  TAPE-DRIVE 18
Switches
  /ALL 18
  /FILE 27, 29
  /REASON 22, 32
  /REQUEST-ID 32
SYSTAT 4, 10-11, 33, 45
System
  Reload 39
System-Wide Mail 13

Tape
  CANCEL 22
  Dismounting 21, 51
  Initialize 22
  Label 22
  Mounting 20, 51
TAPE-DRIVE
  AVAILABLE 18
  UNAVAILABLE 17
TOPS-20
  Utilities 1

^C 2

^H 6
^R 2
^T 2
^U 2
^X 39

The WATCH PROGRAM (on the dec20s) is the program that collects statistics on the DEC's usage. If for some unknown reason WATCH is not running. statistical data will be lost. Therefore, you should restart WATCH whenever you notice a problem with it.

WATCH runs as a sub-job under PTYCON and can be checked by doing a CTL X to get the PTYCON prompt, then typing WHAT ALL. If WATCH shows up in EXEC or no JOB assinged, it is not running.
If no job is assinged. Do STEP 1

STEP 1

1. PTYCON > conn watch

   [CONNECTED TO SUBJOB WATCH(1)]
2. type ^C
   ^C
   ^C
3. $log operator (password)

Coutinue at step 2, item (4) below.

If WATCH shows that it is in EXEC or if you had to log it in follow the procedure below to restart it.

STEP 2

1. Tpye ^X

2. PTYCON> conn watch
   ***[CONNECTED TO SUBJOB WATCH(1)]

3. type ^C
   ^C
4. $RESET
5. $WATCH

The system will respond with the following messages.

```
WATCH 5(2), /H for help.
Output to file:WATCH-FULL.DATA
Would you like to output data records?  (Y/N): Y
Output file for data records: WATCH-REPORT.DATA
Print monitor statistics? Y
Print job summary ?  Y

Time period  (MM:SS)  10:00

WATCH IN OPERATION --- ^X
PTYCON> conn opr
[CONNECTED TO SUBJOB OPR(6)]
(CR)

--done--
```

J C